

## CLAIMS

What is claimed is:

- 5 1. A dental matrix apparatus for supporting a filler placed into a tooth in a class II, III or IV restoration, the apparatus comprising: a retainer portion of a thin sheet stock and having a generally concave surface for abutting the tooth, the retainer portion providing a topper marginal ridge area, a central contact area and a lower, convex shaped gingival margin area, the marginal ridge area and the contact area of, at most, one-half the thickness of  
10 the gingival margin area.
2. The apparatus of claim 1 further comprising an elongate insertion tab integral with the retainer portion and extending laterally therefrom.
3. The apparatus of claim 2 further comprising a repositioning tab integral with the retainer portion and extending laterally therefrom in opposition to the insertion tab.
- 15 4. The apparatus of claim 3 wherein the repositioning tab is shorter than the insertion tab.
5. The apparatus of claim 1 wherein the thin sheet stock is of a nickel-titanium alloy having shape memory characteristics.
6. The apparatus of claim 5 wherein the sheet stock comprises about 55.8 percent Ni and about 44.2 percent Ti, by weight.
- 20 7. The apparatus of claim 5 wherein the sheet stock is one of Nitinol® and NiTi® alloys.
8. The apparatus of claim 1 wherein the thin sheet stock is of one of a steel alloy, a titanium alloy and pure titanium.
9. The apparatus of claim 8 wherein the alloy is of a spring temper.
10. The apparatus of claim 1 wherein the sheet stock is at least one of segmented  
25 polyurethane, polycarbonate urethane, and polyetherurethane.
11. The apparatus of claim 10 wherein the sheet stock is reinforced with one of nylon and stainless steel to improve rigidity.
12. A dental matrix apparatus for supporting a filler material placed into a tooth in a class II, III or IV restoration, the apparatus comprising: a retainer portion of a nickel-titanium

memory metal alloy sheet stock having a first thickness, and having a generally concave surface for abutting the tooth, the retainer portion providing a topper marginal ridge overarched the tooth, the marginal ridge area and a contact area formed with a second thickness less than the first thickness.

- 5 13. The apparatus of claim 12 further comprising opposing elongate insertion tabs extending laterally from the retainer portion.
14. The apparatus of claim 12 wherein the sheet stock comprises about 55.8 percent Ni and about 44.2 percent Ti, by weight.
15. The apparatus of claim 12 wherein the sheet stock is one of Nitinol® and NiTi® alloys.
- 10 16. The apparatus of claim 12 wherein the thin sheet stock is of one of a steel alloy, a titanium alloy and pure titanium.
17. The apparatus of claim 16 wherein the alloy is of a spring temper.
18. The apparatus of claim 12 wherein the sheet stock is at least one of segmented polyurethane, polycarbonate urethane, and polyetherurethane.
- 15 19. The apparatus of claim 18 wherein the sheet stock is reinforced with one of nylon and stainless steel to improve rigidity.
- 20 20. A method of forming and placing a dental matrix apparatus for supporting a filler material placed into a tooth in a class II, III or IV restoration, the method comprising the steps of: forming a matrix retainer portion of a nickel-titanium memory metal alloy sheet stock having a first thickness, with a generally concave surface for abutting the tooth; forming the retainer portion with a topper marginal ridge area positioned for overarched the tooth and a contact area positioned for tooth contact, the marginal ridge area and a contact area formed with a second thickness less than the first thickness; inserting an insertion tab portion of the matrix apparatus between the tooth and an adjacent tooth in a motion directed toward the gum; and moving the retainer portion into place adjacent the preparation by a lateral force exerted on the insertion tab.
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